

# European Union at the End of 1997: Who is within the Public Finance "Sustainability" Zone?

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## 1. Introduction

Imminence of the discussions (and decisions) on the eligibility of the member countries of the European Union to adopt a common monetary unit makes it of some interest to consider their public finance positions at the end of 1997. The latest issue of OECD (1997) gives the relevant estimates at the decisive date of December 31, 1997.

As is well known, eligibility of each member country is to be assessed, according to art. 109j of the Maastricht Treaty, on the basis of four criteria, namely: *i*) a degree of price stability close to that achieved by the three best performing European countries; *ii*) "sustainability" of its public finance position; *iii*) observance, for the two years prior to the event, of the normal fluctuation margins provided for by the exchange-rate mechanism of the European Monetary System; and *iv*) durability of convergence of long-term interest rates. While satisfaction of criteria *i*), *iii*) and *iv*) has practically been achieved, by now, by all member countries (with the one exception of Greece), criterion *ii*), concerning "sustainability" of the public finance positions, still remains a subject for discussion. Unfortunately, the text of the Treaty of Maastricht is not of decisive help on this point,

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as it does not make explicit reference to any accepted notion of public finance “sustainability”, but simply – in an Annex Protocol – specifies two “reference values”: a public deficit/GDP ratio of 3% and a public debt/GDP ratio of 60%.

But what is the rationale behind these figures?

The easiest attitude to take is to avoid asking this question at all and simply adopt the dogmatic stand of considering those two numbers as given, with no discussion or justification; as if, so to speak, they came from heaven. Any deviation from them (even by a fraction of one percentage point) would spell non-eligibility and that would be the end of it.

But such a rigid approach is contradicted by the Treaty of Maastricht itself, which in art. 104c suggests a more flexible attitude with reference to that magnitude that can only change slowly in time, namely the debt/GDP ratio. Art. 104c explicitly states that a higher than 60% debt/GDP ratio would be acceptable, *provided that* it “is sufficiently diminishing and approaching the reference value at a satisfactory pace”. This wording, while itself insufficient to settle the issue, is also a source of further complications; for, if the debt/GDP ratio is actually diminishing, it leaves entirely open the further (and inevitably controversial) question of what a “satisfactory pace” really is.<sup>1</sup>

But a more reasonable, non-dogmatic, interpretation can be seen to emerge from the Treaty itself, if only one pays some attention to the *purpose* for which those two figures were introduced. Both in the opening sentence of art. 104c and in the title of the Annex Protocol where those two figures appear, the reference that is made is to an “excessive deficits procedure”. This makes one infer that the purpose precisely was that of avoiding the formation, and persistence, of “excessive government deficits”.

<sup>1</sup> An example of the complications into which one is drawn, when taking the wording of art. 104c at face value and trying to elaborate it further, is given by a recent article by Ron Berndsen (1997), published in this Review. Not only does the author consider the two Maastricht figures (3% for the deficit/GDP ratio and 60% for the debt/GDP ratio) as externally given and beyond discussion, but he is compelled to add 2 further parameters of his own in order to evaluate: *i*) whether the debt/GDP ratio is “sufficiently diminishing”, and, *ii*) whether it is “diminishing at a satisfactory pace”. The long and complicated procedure is inevitably controversial. Moreover, the author adopts a screening requirement on inflation which is, unfortunately, out of date.

## 2. A basic “sustainability” relation

It is useful to recall that, at the time the Maastricht Treaty was drawn up (1992), the 60% percentage was roughly the average of the public debt/GDP ratio in the European Community, with both Germany and France coming close to it. One may easily realise that, when the *nominal* rate of growth of GDP is 5% (which seemed a reasonable figure to assume at the time, owing to, let us say, a 2% real rate of growth and a 3% rate of inflation), a situation in which the public debt/GDP ratio is 60% implies that the deficit/GDP ratio must be no higher than 3%, if one wants to preserve a non-increasing debt/GDP ratio.

This simple logical exercise offers a perfectly reasonable explanation for the “reference values” stated in the Annex Protocol to the Maastricht Treaty. It also implicitly contains a perfectly reasonable definition of the notions of “excessive public deficit” and public finance “sustainability”. Namely, as we may state, a public deficit is “excessive” when it fails to cause a decrease (or at least to keep constant) the public debt/GDP ratio. And accordingly, the public finance position is “sustainable” when the debt/GDP ratio is persistently decreasing or, at worst, is remaining constant (for further details, see Pasinetti 1998).

In this context, those figures, far from appearing as God-given mythical numbers, simply emerge as a triplet of numbers defining a particular point on the boundary to a 3-dimensional sub-space defining “sustainability” of public finance. In less formal parlance, they represent a point on the boundary to the “zone” in which *the public debt to GDP ratio is either constant or decreasing*. But clearly, within such a “sustainability” zone, the mentioned triplet of numbers (3%, 60%, 5%) only represents one single point. There is an infinite number of other points – i.e. an infinite number of triplets – that share the same characteristics.

In previous papers (Pasinetti 1989, 1997a, 1997b and 1998), I have shown that the relation (linking public debt, public deficit and rate of growth) that defines the boundary to such “sustainability” zone is extremely simple, namely:

$$(S/Y) = -g(D/Y), \quad (1)$$

where

$S$  : total public surplus (if positive), or deficit (if negative),

$D$  : total public debt,

$Y$  : gross domestic product (GDP),

$g$  : nominal rate of growth of GDP.

The 3-dimensional sub-space or "zone of sustainability" (i.e. the zone within which the debt/GDP ratio is decreasing or, at most, constant) is therefore defined by:

$$(S/Y) \geq -g(D/Y). \quad (1^*)$$

Note the simplicity of this relation. It links together the three relevant magnitudes of our discussion, taken at *nominal* values, i.e. without the need of any elaboration. Once these three magnitudes are known, relation (1\*) provides us with an immediate answer to the question: is any particular country *within* the "sustainability zone", or is it out of it, and, if so, by how much?

### 3. The European Union countries at the screen of the "sustainability" relation, at the end of 1997

Table 1, compiled on the basis of data from the latest OECD publication (1997), lists in columns 1, 2, 3, the three relevant magnitudes (debt/GDP, rate of growth, deficit/GDP), at the end of 1997, for the 15 member countries of the European Union. For completeness sake also those countries (Denmark, Sweden, UK) are included that have decided *not* to be part of the Monetary Union in the first round. There are some blank spaces for Luxembourg, whose data are not available and do not appear in the OECD bulletin. All data are of course still *estimates*. But the definitive data (which will become available shortly) are unlikely to affect the over-all picture significantly. When they are ready, they can easily be inserted and the necessary revisions be carried out.

TABLE 1

SITUATION OF THE PRINCIPAL COUNTRIES IN THE EU  
WITH REFERENCE TO THE RELATION BETWEEN TOTAL DEFICIT  
AND PUBLIC DEBT (AS % OF GDP), 1997

	$\frac{D}{Y}$	$g$	$\frac{S}{Y}$	$g \frac{D}{Y}$	Difference (3) - (4)
	(1)	(2)	(actual deficit) (3)	(maximum stability deficit) (4)	(5)
Italy	122.3	4.0	-3.0	-4.89	+1.89
Germany	60.7	3.3	-3.0	-2.00	-1.00
France	57.0	3.3	-3.1	-1.88	-1.22
United Kingdom	53.8	5.8	-2.3	-3.12	+0.82
Spain	69.8	5.2	-2.9	-3.63	+0.73
Belgium	124.5	4.2	-2.5	-5.23	+2.73
Netherlands	71.9	5.8	-2.0	-4.17	+2.17
Ireland	67.5	8.1	-0.2	-5.47	+5.27
Greece	107.3	10.1	-5.0	-10.84	+5.84
Finland	59.4	5.8	-1.3	-3.45	+2.15
Luxembourg		5.5			
Austria	65.5	3.7	-2.9	-2.42	-0.48
Portugal	66.5	6.5	-2.9	-4.32	+1.42
Denmark	63.1	5.9	+0.5	-3.72	+4.22
Sweden	76.6	3.6	-1.5	-2.76	+1.26

Source: Our elaborations on OECD data (estimates), *Economic Outlook*, no. 62, December 1997.

Column 4 contains the computation of relation (1), as applied to each country. Each number indicates the maximum "sustainability" deficit, for each country; more specifically, it indicates the hypothetical maximum deficit/GDP ratio that each country could afford while still preserving a non-increasing debt/GDP ratio (whatever this ratio may be to begin with). It represents the country's point on the boundary line, the watershed between "sustainability" and divergence.

FIGURE 1

Column 5 lists the differences between the corresponding magnitudes in columns 3 and 4. Each number expresses, so to speak, the *distance*, in terms of a number of percentage points, of the actual deficit/GDP ratio from the hypothetical borderline deficit/GDP ratio – a positive distance if the country is within the “sustainability” zone, a negative distance if it is outside.

Since each year’s deficit goes to increase the outstanding debt, the higher these numbers are – i.e. the wider the gap between the hypothetical deficit that would still keep the debt/GDP ratio constant and the actual deficit – the higher the *speed* at which the debt is diminishing. Therefore the percentage points in column 5 may also be regarded as *indexes of the speed of convergence* (or of divergence, if negative).

To represent the whole Table 1 geometrically, one would have to use a 3-dimensional space. It is possible however to use a set of 2-dimensional representations, if one draws a diagram for each rate of growth, corresponding to each specific country. Figure 1 contains the whole set of such diagrams. In each of them, the “sustainability” zone (the shaded area) is delimited by a boundary line expressing relation (1). The deficit/GDP ratio and the debt/GDP ratio are on the ordinate and on the abscissa respectively, while the negative slope of the border line represents the specific country’s rate of growth.

As the reader may immediately see, the results of this exercise are really striking, if compared with what is generally taken for granted in current debate. At the end of 1997, all member countries of the EU are revealed to be within the “sustainability” zone, with the notable exception of France, Germany and (to a lesser extent) Austria.

It may be useful to spell out explicitly what this means. The meaning is that in 1997 the debt/GDP ratio has been *decreasing* in all EU countries, except France, Germany and Austria. Even Greece (which is excluded from the common monetary union by failing to satisfy the other Maastricht criteria, especially that of inflation) is on a convergence path, as far as the public debt is concerned.

The signing of the Maastricht Treaty has indeed brought about conspicuous effects! Most European governments seem to have been able to make exceptional efforts towards the compression of their public deficits, with unprecedented results, in terms of public finance, though presumably with heavy sacrifices – open to objections in other respects – in terms of taxation and unemployment.

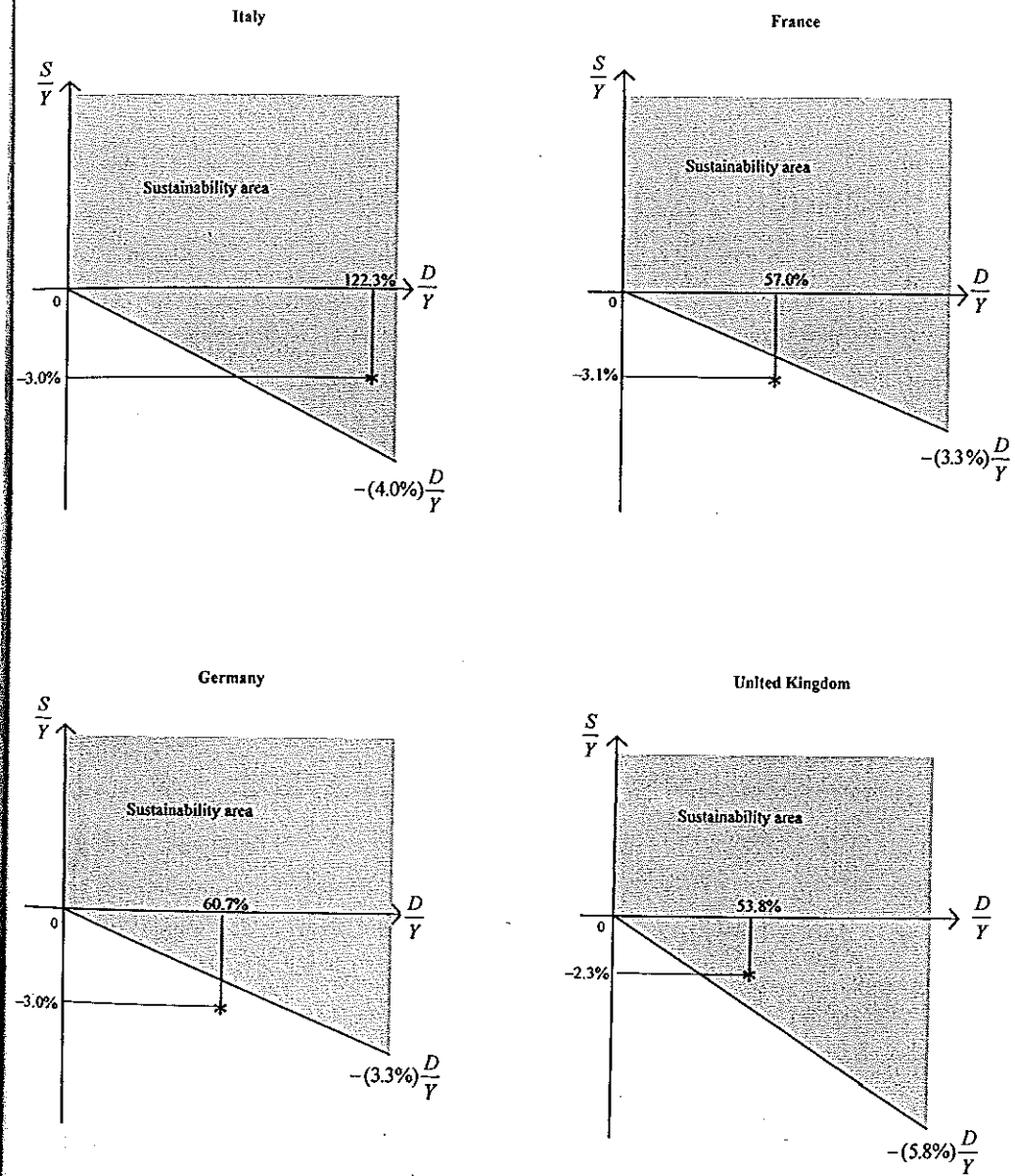


FIGURE 1 (cont.)

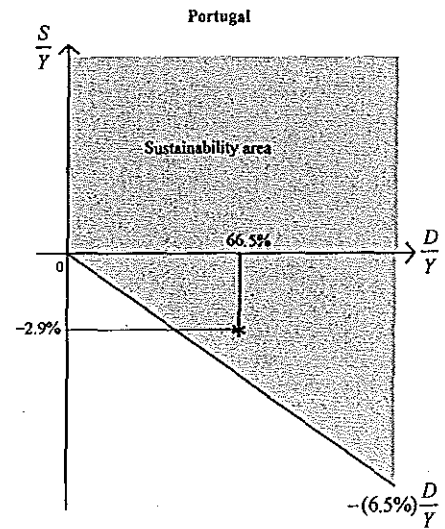
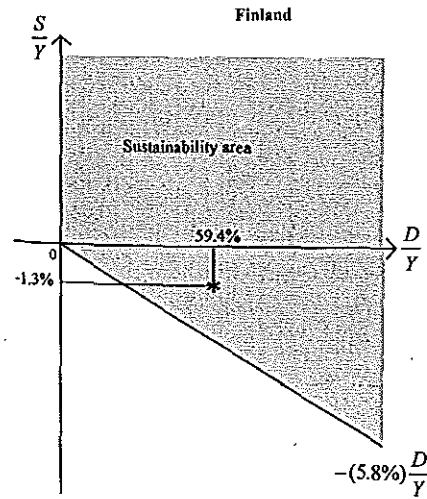
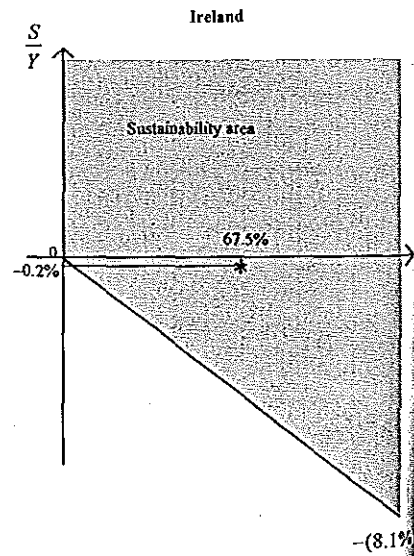
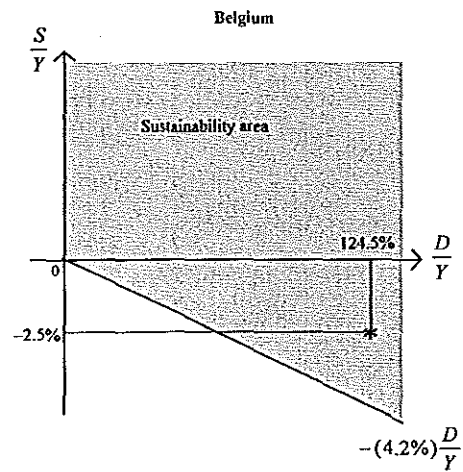
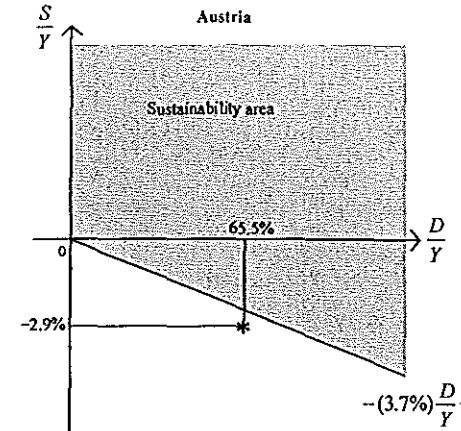
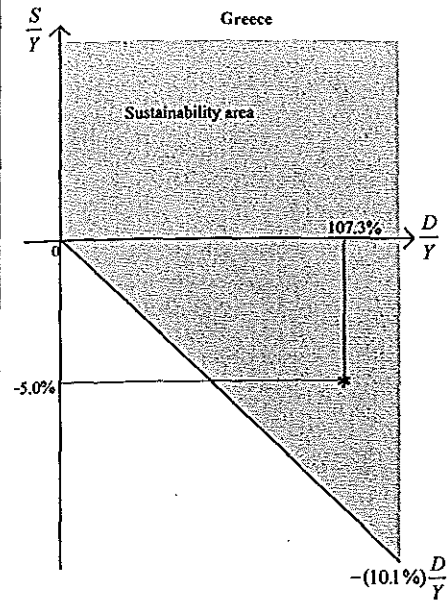
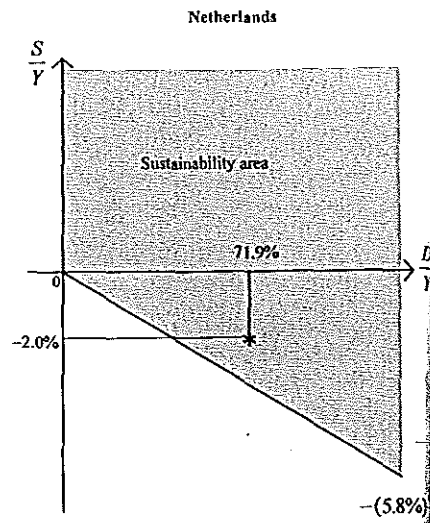
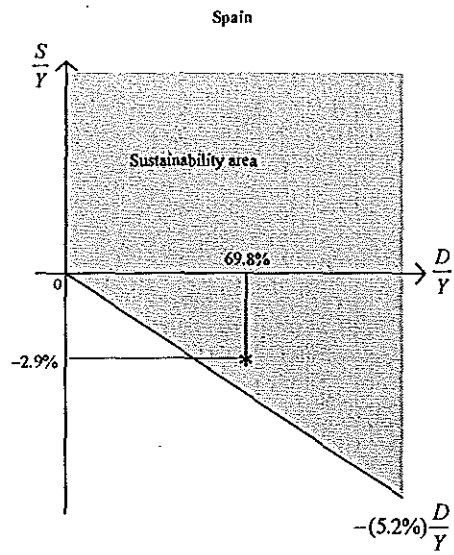


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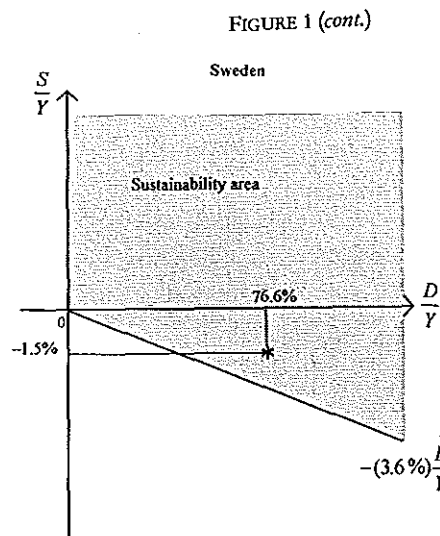
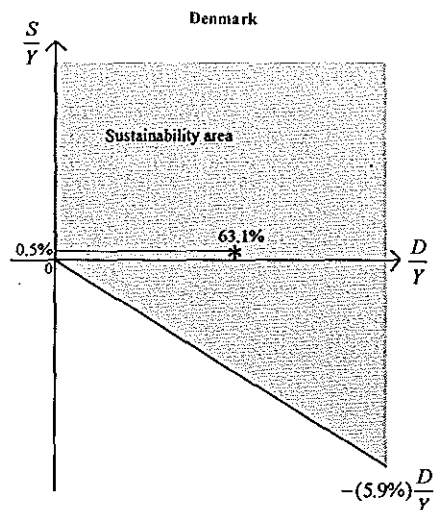


FIGURE 1 (cont.)

#### 4. An alternative way of looking at "sustainability": the primary deficit/debt relation

It may be noted that the maximum total deficit which any country can afford to have, while still remaining on a public debt convergence path, is higher, the higher the stock of its outstanding debt (relatively to GDP). At a first superficial glance, this may appear counter-intuitive. But relation (1) refers to *total* deficit, which already *includes* the effect of interest payments.

It is possible to obtain perhaps a more intuitive picture of the situation if one considers an alternative version of the same relation, linking the *primary* deficit (instead of the total deficit) to the total debt.

The primary deficit,  $(S/P)^{(p)}$ , is usually defined as:

$$(S/Y)^{(p)} \equiv S/Y + i(D/Y),$$

i.e. as the deficit as it would be if interest payments were deducted. We may use this version of the deficit notion by adding interest payments to both sides of relation (1). We thus obtain the new relation:

$$(S/Y)^{(p)} = (i - g)(D/Y), \quad (2)$$

which provides an alternative way of expressing the same previous concept of a boundary to the "sustainability" zone. In this alternative way, the "sustainability" zone is defined by:

$$(S/Y)^{(p)} \geq (i - g)(D/Y). \quad (2')$$

This again can be looked at as a 3-dimensional sub-space defining public finance "sustainability" in terms, now, of a relation between *primary* deficit, public debt and the difference between the rate of interest and the rate of growth of GDP.

The boundary relation expressed by (2) is as simple as the boundary relation expressed by (1), but it includes one further magnitude: the rate of interest (besides the rate of growth), or rather it includes the difference between rate of interest and rate of growth. We can see clearly in this version that the higher the amount of the outstanding public debt, the higher the primary surplus that a country

must achieve in order to remain within the public finance "sustainability" zone.

On the basis of the same OECD data, we may compile a second table (Table 2), where the exercise carried out in the previous Section is repeated in terms of the primary surpluses, or deficits.

There is no need to illustrate Table 2 in detail as it is similar to Table 1. The last column (column 7) now gives an alternative version of the distance of the actual position of each country from the boundary to the "sustainability" zone. Here again this distance represents an index of the *speed* of convergence (if positive) or of divergence (if negative).

Figure 2, similarly to Figure 1, gives a set of 2-dimensional geometric representations of the data of Table 2. It contains a set of diagrams, each of which is drawn with reference to the specific difference between the rate of interest and the rate of growth of each country. The results are basically the same as those shown in Table 1 and Figure 1, with the only exception that, in this alternative version, the UK and Sweden too are revealed to be (with Austria, Germany and France) outside the "sustainability" zone.<sup>2</sup>

From Table 2 and Figure 2 we can now see more directly that the reason why the countries *within* the "sustainability" area have achieved such positions is that they have realised considerable primary *surpluses*. It should be pointed out that, in order to remain within the "sustainability" zone, any country will *always* have to achieve a primary surplus (i.e. to collect a taxation revenue higher than total expenditure, excluding interest outlays), as long as it has a higher than zero public debt, and as long as the rate of interest on such public debt is greater than the rate of growth of GDP. It is interesting to note, from Table 2, that there are 3 countries (the Netherlands, Ireland and Finland) for which the difference ( $i - g$ ) is negative: they have achieved a nominal rate of growth that is higher than the nominal rate of interest. These countries could theoretically even afford to have a *negative* balance of the *primary budget*, i.e. a primary

<sup>2</sup> But the results shown in Table 1, expressing relation (1) between debt and *total* deficit, are more significant, as they include the effects of interest *actually* paid, while the results shown in Table 2 give the outcome as it would be if the present outstanding stock of debt were to be re-contracted at the present (obviously higher) level of the long-term interest rate.

*deficit*, and still remain within the "sustainability" zone (see their diagrams in Figure 2). They could in fact benefit from a sort of public subsidy, instead of being subjected to a social burden, deriving from servicing the public debt. Paradoxically, such a primary deficit (which would still keep them on the debt/GDP convergence path) would be higher, the higher their outstanding debt/GDP ratio. Such is the consequence of a negative ( $i - g$ ) difference!

TABLE 2

SITUATION OF THE PRINCIPAL COUNTRIES IN THE EU  
WITH REFERENCE TO THE RELATION BETWEEN PRIMARY DEFICIT  
(OR SURPLUS) AND PUBLIC DEBT (AS % OF GDP), 1997

	$\frac{D}{Y}$	$i$	$g$	$(i - g)$	$\frac{\mathcal{P}}{Y}$	$(i - g) \frac{D}{Y}$	Difference
	(1)	(rates of interest) (2)	(rates of growth) (3)	(4)	(primary surplus or deficit) (5)	(stability primary surplus) (6)	(5) - (6) (7)
Italy	122.3	6.8	4.0	2.8	+5.2	+3.42	+1.78
Germany	60.7	5.7	3.3	2.4	+0.2	+1.46	-1.26
France	57.0	5.7	3.3	2.4	+0.4	+1.37	-0.97
United Kingdom	53.8	7.0	5.8	1.2	+0.4	+0.65	-0.25
Spain	69.8	6.5	5.2	1.3	+1.5	+0.90	+0.60
Belgium	124.5	5.8	4.2	1.6	+5.1	+1.99	+3.11
Netherlands	71.9	5.7	5.8	-0.1	+2.3	-0.07	+2.37
Ireland	67.5	6.5	8.1	-1.6	+3.7	-1.08	+4.78
Greece	107.3	10.3*	10.1	0.2	+5.0	+0.21	+4.79
Finland	59.4	4.8	5.8	-1.0	+0.6	-0.59	+1.19
Luxembourg			5.5				
Austria	65.5	5.8	3.7	2.1	+0.6	+1.38	-0.78
Portugal	66.5	6.5*	6.5	0.0	+1.7	0.00	+1.70
Denmark	63.1	6.4	5.9	0.5	+2.7	+0.32	+2.38
Sweden	76.6	6.7	3.6	3.1	+1.9	+2.37	-0.47

\* OECD, *Main Economic Indicators*, November 1997, Paris.

Source: Our elaborations on OECD data (estimates), *Economic Outlook*, no. 62, December 1997.

FIGURE 2

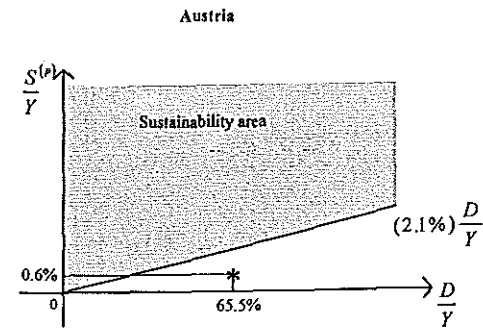
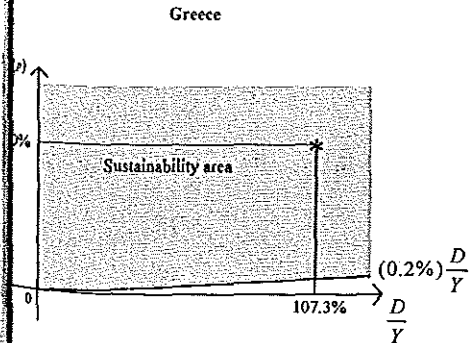
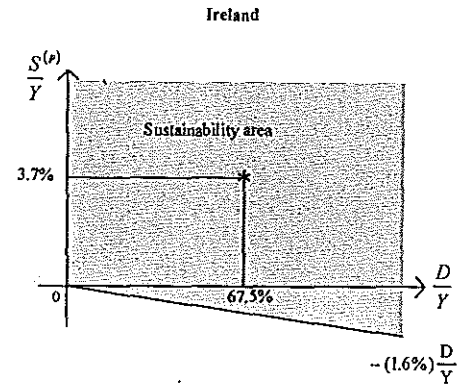
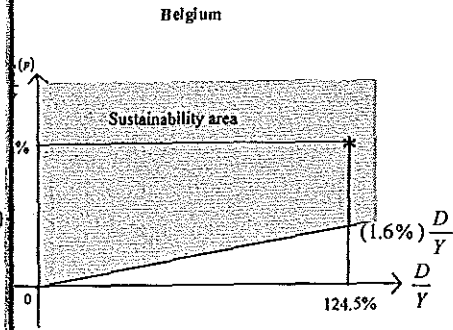
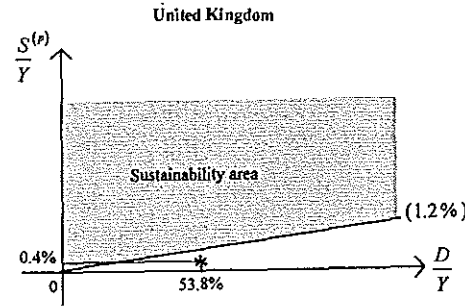
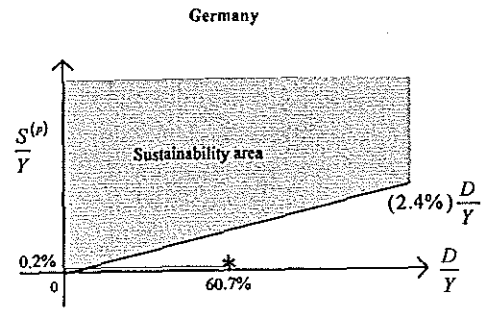
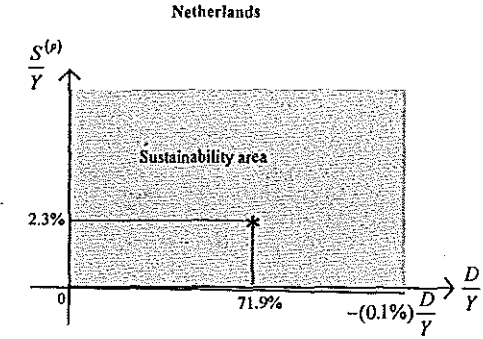
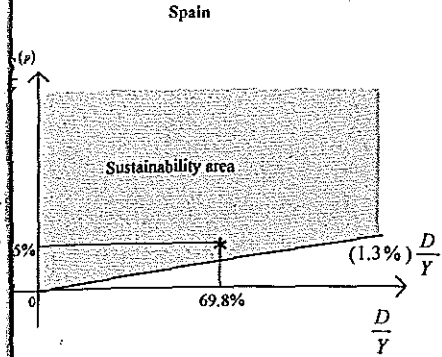
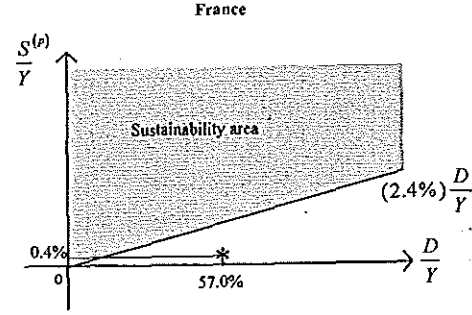
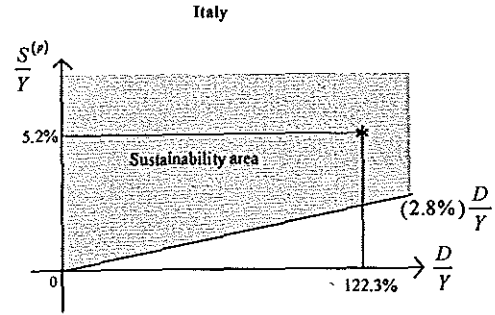
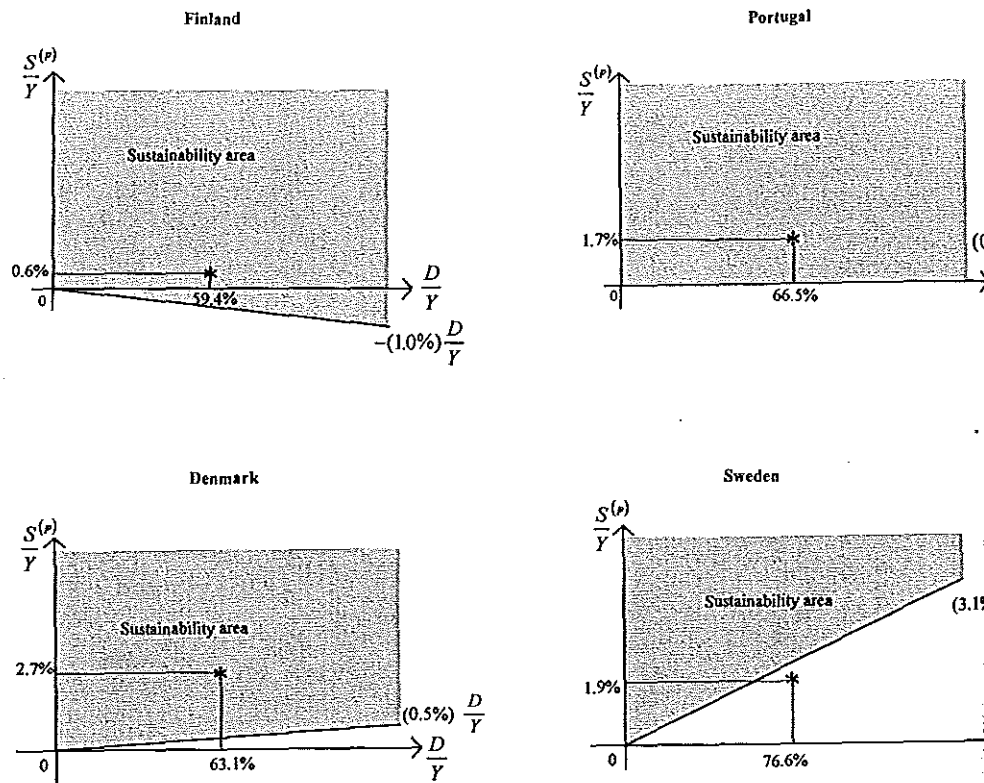


FIGURE 2 (cont.)



FIGURE 2 (cont.)



## 5. What about the level of the public debt?

A conspicuous feature of Tables 1 and 2 is that two EU countries (Belgium and Italy) are shown to have a public debt/GDP ratio considerably higher than (actually double) that of the average. This feature is widely emphasised in current debate.

It is natural to ask: is this not a preoccupying feature in itself, even if these countries have achieved "sustainability"? To answer this question correctly, one must distinguish sharply between two problems: the problem of the *level* of the public debt and the problem of its *rate of change* in time.

A positive rate of change of the debt/GDP ratio, i.e. an increasing public debt, especially if it is persistent and not merely temporary, is a *prima facie* indication of financial disorder, an indication that public finances may have got out of control. And this would be an alarming feature indeed. But a stable (or decreasing) level of the debt/GDP ratio – which is what places a country within the "sustainability" zone – is an entirely different matter.

It is important to stress that it is not possible to tell – on the basis of economic theory alone – what is the level at which a (stable) public debt/GDP ratio can be said to be optimal or desirable. In fact the economic literature on "sustainability" of fiscal policy generally takes the *level* of the debt/GDP ratio which is to be aimed at (the 'ideal' level, so to speak), as an exogenous magnitude (see, for all, Blanchard *et al.* 1990).

At the same time, it may be useful to recall that the stock of outstanding debt has also another function to perform. Any financial liability has, so to speak, two sides, or two facets. While being indeed a liability for the debtor, it also represents a financial asset for the creditor. At any given moment, therefore, the public-debt bonds in circulation also fulfil a function similar to that fulfilled by the stock of money. They provide individuals and institutions with financial assets to hold. This also means that, for this purpose, it is the total (public plus private) financial liabilities that should be taken into consideration.

In two previous papers (Pasinetti 1997b, 1998, but see also Vaciago 1993), I have pointed out that precisely the two countries in the European Union – Belgium and Italy – that have the highest pub-

lic debt/GDP ratios are also the two countries that have the lowest *private* debt/GDP ratios. It is quite evident that – when one considers the *sum* of public and private debt (relatively to GDP) – both Belgium and Italy appear to be perfectly in line with the other industrial (European and, incidentally, also non-European) countries. What such data show, therefore, is that – for reasons connected with past history – the *proportion* of public to private indebtedness has become higher in Belgium and Italy than in the other EU countries, though total indebtedness, relatively to GDP, is not substantially different in all countries.

In this respect, the present trend toward privatisation of public enterprises is a process that is going automatically to lead those two countries toward a re-distribution of public and private debts, within total indebtedness, which is increasingly becoming more similar to the one characterising the other European countries. Through this route, convergence towards the average of the European public debt/GDP ratio may well arrive earlier than expected.

Yet one may ask at this point: is this going to be so important? Is it really important that the *private* debt to GDP/ratio should increase (and the public debt/GDP ratio should decrease), while the *total* degree of indebtedness, relatively to GDP, remains roughly at the present level? Is it really important that the proportion between private and public indebtedness should quickly converge towards uniformity in all European countries, even before they converge in so many other structural aspects?

These remarks make it apparent that, most probably, paying a more articulate attention to the wider aspects of relevance and functions of the public debt might be of help.

One must of course consider that, if the outstanding total stock of public debt fulfils, for each country, a function similar to that of the total stock of money in circulation, the important difference remains that money is interest-free, while public-debt bonds carry the payment of interest, which represents a negative item in the public budget. The above analysis shows, however, that the extent of the “social burden” entailed by interest payment crucially depends on  $(i - g)$ , namely the difference between the nominal rate of interest and the nominal rate of growth. At the limit, a zero difference between  $i$  and  $g$ , when the public debt/GDP ratio remains stable, would entail no social burden at all (see, on this, Pasinetti 1997a). Even more im-

portantly, a negative difference (as is at present the case for the Netherlands, Ireland and Finland, as pointed out above) would even entail a kind of social subsidy!

A vital point seems to emerge, therefore, and that is the extremely important role to be played by the policies aimed at regulating the level of the medium- and long-term rates of interest, within a framework of financial and fiscal stability.

A separate and legitimate worry is however coming to the fore. In time of financial turbulence and wide fluctuations of the interest rate levels, those countries that have high public debt/GDP ratios would be in a kind of higher public-finance fragility with respect to those countries with lower public debt/GDP ratios. Yet, one might also argue that – if total indebtedness is going to remain the same – the converse type of fragility (i.e. fragility of the private-finance sector) would at the same time characterise the other countries. The asymmetry between countries with different proportions of public versus private indebtedness would seem therefore to boil down to the consequences to be faced in the case of general financial turbulence: a higher burden on public budgets in the one case as against a higher rate of private companies and/or small firms bankruptcies in the other case.

There may well be a way of striking a balance; and this balance may not necessarily be the same for all European countries, at least not until they reach a stage at which they become structurally more similar to one another.

These seem to be important questions for future reflection.

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